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LICHENS.—THELOSCHISTES—PYXINE.

By Carolyn W. Harris.

Following the classification of Prof. Tuckerman, who is still the authority on North American Lichens, Theloschistes and Pyxine complete the family of Parmeliei which we have been studying in The Bryologist, with the exception of one rather doubtful and little known genus, Speerschneidera, represented by only one species *S. euploca.*

Theloschistes is still included in the genus Physcia by many lichenists in Europe. Several species are found growing with Physcia, and the contrast between the yellow thallus of the Theloschistes and the gray of the Physcia is very effective. All the species of Theloschistes which are described in this article, have a yellow or greenish-yellow thallus, which is either foliaceous or fruticose. The underpart is always white, or light gray, with clusters of darker rhizoids with which it is attached to the substratum.

Placodium elegans is much like some species of Theloschistes, but the thallus is crustaceous, and a much deeper orange; the apothecia are also smaller and darker; the underside, while pale, is much appressed or wrinkled and is free from rhizoids.

In Theloschistes the apothecia are usually quite large, in several species are very crowded. They are cup-shaped as in Parmelia and Physcia, but the disk is flatter and the thalline rim is thinner. This genus is found on living trees, old fences and on rocks. The yellow color of the thallus is said to be due to the large amount of the gold-colored crystals of chrysophanic acid.

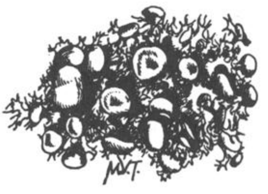

Fig. 1. *Theloschistes chrysophtalhmus.*

Theloschistes chrysophthalmus (L.) Norm. (Fig. 1.) Thallus fruticose, yellow or yellowish-gray, ascendant and tufted. The narrow, linear branches terminated by fibrils. The underside is a pale gray, appressed, with mats of rhizoids toward the middle which serve as hold-fasts to the substratum. This lichen, except in color, resembles *Ramalina calicaris* var. *fastigiata.* The apothecia are large, subterminal, the disk is a bright orange color with an entire margin; they are often so numerous as to cover almost the entire thallus. Found on trees in the United States, also in the South and West.

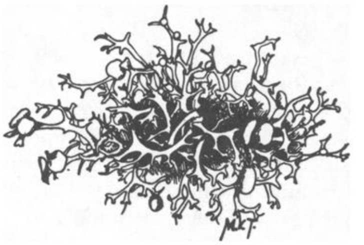

Fig. 2. *Theloschistes chrysophthalmus* var. *flavicans* ×2.

Theloschistes chrysophthalmus (L.) Norm., var. flavicans, Wallr. (Fig. 2.) This beautiful lichen is in color and general appearance much like *T. chrysophthalmus,* but can be distinguished from it by its much divided branches which are long and linear, giving it a more delicate appearance, somewhat resembling *Physcia ciliaris,* except in color. The thallus is yellow, sometimes with a grayish tinge. The pothecia are medium, have a yellow or orange disk with cilia on the margin. Found fertile in the Southern States, and sterile in the North, where it is not common.

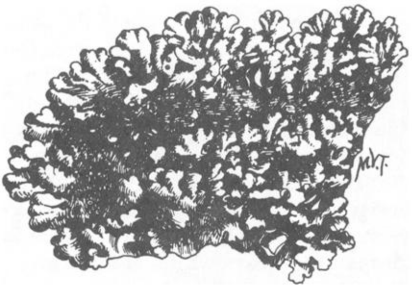

Fig. 3. *Theloschistes parietinus* × 2.

THELOSCHISTES PARIETINUS (L.) NORM. (Fig. 3.) Thallus foliaceous, usually orbicular; the lobes, which are short, thin, rounded, crenate and somewhat rugose, turn upward at their margins, otherwise cling closely to the substratum by means of short rhizoids. The apothecia are smaller than in *T. chrysophthalmus* and are sessile; the disk is orange, with a thin, wavy margin; they are chiefly toward the centre and are crowded. This is one of the commoner species and resembles *Parmelia* in habit of growth. Is found on trunks and branches of trees, stone walls and rocks, is especially fine near lakes of any size.

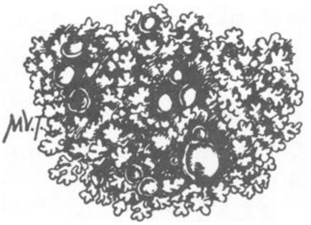

Fig. 4. *Theloschistes polycarpus.*

THELOSCHISTES POLYCARPUS (Ehrh.) Tuckm. (Fig. 4.) Thallus foliaceous, reduced, with narrow, many cleft divisions, which are short and rounded. In color greenish-yellow, turning darker with age. The underside much wrinkled and covered with short white rhizoids. The apothecia are medium, the disk is concave, bright orange with crenulate margin. They are often so numerous as to almost cover the lobes of the thallus, except at the outer edge. This species usually occurs in small, orbicular patches, but occasionally larger specimens are found; it grows on trees, dead wood and on rocks.

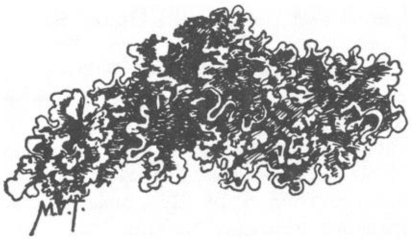

Fig. 5. *Theloschistes lychneus.*

THELOSCHISTES LYCHNEUS (Nyl.) Tuckm. (Fig. 5) This species is sometimes confused with *Cetraria juniperina* var. *pinastri* which it resembles, but from which it can be distinguished readily, as the thallus of the *Cetraria* is larger, more leaf-like, the underside is always yellow, the soredia are sulphur color, while in *T. lychneus* the thallus is flatter, more appressed, light gray underneath and covered with fine rhizoids; the soredia are light lemon color. The lobes of the thallus of *T. lychneus* are broader than in *T. polycarpus*, and are not quite so deep a yellow or orange. Apothecia are not common, but soredia are frequent, covering the curled over margins of the lobes so that they are very granular. Found on rocks, but more frequently on living trees, especially on old elms.

THELOSCHISTES CONCOLOR (Dicks.) Tuckm. Thallus foliaceous with very narrow, finely dissected, branching lobes of uniform width, adhering closely to the substratum. Greenish-yellow in color, white on the underside, with short, white rhizoids. The apothecia are small, sessile and not very numerous, occasionally fibrillose; disk the same color as the thallus, with an entire margin. This is a very common species, found in all parts of North America on trees and rocks.

THELOSCHISTES CONCOLOR (Dicks.) Tuckm., var. EFFUSE Tuckm. This species is a reduced form of *T. concolor*. The thallus is more squamulose and scattered, with powdery margins, appearing very much like a very small form of *T. lychneus*. It is found on trees, usually in little scattered yellow patches.

PYXINE resembles Physcia in general appearance, as well as Parmelia, but the thallus is much thinner and clings more closely to the substratum. There are only a few species of Pyxine, and many lichenists do not consider it a separate genus. We have only two species which are common in North America. The apothecia are small and sessile, with a pruinose or black disk whose margin is wavy.

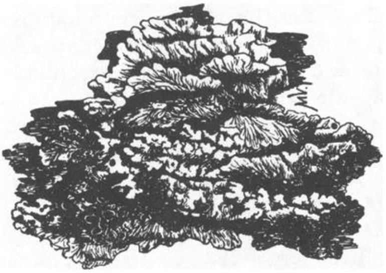

Fig. 6. *Pyxine picta.*

PYXINE PICTA (Sw.) Tuckm. (Fig. 6.) Thallus closely adnate to the substratum, with thin, confluent, flattened lobes, the older portion wrinkled and warty; gray or greenish-white on the upperside, and black underneath. The apothecia are small and sessile, with a pruinose or black disk, and thick thalline border, which is crenate. Found on trees and dead wood in the Southern States.

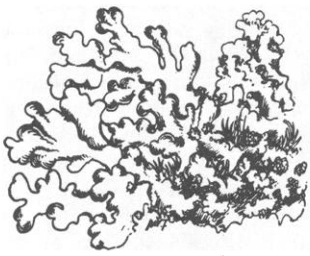

Fig. 7. *Pyxine sorediata* ×2.

PYXINE SOREDIATA Fr. (Fig. 7.) This species resembles closely *Physcia speciosa*, but has two well defined differences in appearance. In *P. speciosa* the cilia are white, in *P. sorediata* they are black. In the former the underside of the thallus is white with grayish fibrils, in the latter the under part is black, with a thick mat of black fibrils. If the thallus of *P. sorediata* is broken it will be found to be yellow within. The lobes of the thallus are many cleft, round and regular, with short black cilia on the under margins. Toward the middle it is well covered with gray soredia forming usually a powdery crust: apothecia are rare. This attractive lichen is found on trees and rocks, the finest specimens on the latter; it is common in the Eastern States. Although semi-crustaceous, in damp weather it can be collected readily if growing on rock; that on trees must be taken with the bark.

SELIGERIA TRISTICHOIDES KINDB.

This species is described in Rev. Bryol., 1896, p. 20, as follows:

"Leaves broader than in *Seligeria tristicha*; costa not distinctly excurrent. Perichætial leaves abruptly narrowed; costa percurrent or short-excurrent.

Norway, northern district. Arnell and Schlegel: E. Nyman."

In his "Species of European and North American Bryineæ," part 2, published in 1897, the author, on p. 213, ranks his new species with "*S. tristicha* Bridel," [which should be *S. tristicha* (Brid.) B. S.] under "Capsule piriform, with straight pedicel." Trusting implicitly in this characterization as correct, I never suspected that the Schlegel and Arnell plant in my hands, and referred to in the January, 1902, BRYOLOGIST, p. 7, in connection with the plant collected by Dr. G. G. Kennedy in Vermont (not in "Connecticut,' as stated erroneously then). *could* be the type—as it appears to be from several considerations—of Dr. Kindberg's *S. tristichoides*. For this Norwegian plant has not "capsule piriform," nor "straight pedicel." The Vermont plant, as I have endeavored to set forth in my note and drawings, agrees essentially with the Norwegian plant, having the capsule *hemispherical*, as shown, and the seta *curved*, as stated. Thanks to the generosity of Mr. H. N. Dixon, who shared with me his specimen of this Norwegian plant collected by Dr. I. Hagen in 1896, I have been able to make another minute comparison, which tends to confirm my view as to the specific identity of the two plants. This is the more important since to Dr. Hagen, the collector, belongs the credit of describing for the first time adequately Kindberg's *Seligeria tristichoides* (in Musci Norvegiæ Borealis, part I. p. 32, 1899) so that it may hereafter be recognized.

Dr. Hagen's statements at the end of his description are of sufficiently general interest to be quoted in full. He says: "This species is the same as has passed since Sommerfelt for S. *tristicha;* neither the author of Bry. Eur. nor Lindberg in his 'Utredning af de Skandinaviska Seligeriæ' have separated it from this species, which is not strange, in view of the scant material available at the time. In 1894 I recognized it as a good new species and have since distributed it frequently as *S. uncula.* although I had a suspicion that the *S. tristichoides* mentioned by Kindberg in Rev. Bryol., 1896 and in Bot. Not might be identical with it. But the descriptions given there were so incomplete that his species could not be distinguished from *S. calcarea*, wherefore I ignored his name. It is only at the place above cited (Bot. Not.) that he has given a diagnosis which, while still very incomplete,